WHAT IS CLAIMED IS:

1. A control method for a military vehicle having a plurality of input devices and a plurality of output devices, comprising:

(A) determining desired output states of a first subset of said plurality of output devices based on I/O status information stored in an I/O status table, said determining step being performed by an interface module that comprises said I/O status table, said interface module being coupled to a first subset of said plurality of input devices and said first subset of said plurality of output devices, said interface module being further coupled to a plurality of additional interface modules by way of a communication network, said plurality of additional interface modules being coupled to a second subset of said plurality of input devices and a second subset of said plurality of output devices, said I/O status information stored in said I/O status table including input status information pertaining to input states of said first subset of said plurality of input devices and input status information pertaining to input states of said second subset of said plurality of input devices;

(B) controlling said first subset of said plurality of output devices in accordance with said desired output states, said controlling step being performed by said interface module; and

(C) maintaining said I/O status table, said maintaining step being performed by said interface module, said maintaining step including

(1) acquiring said input status information pertaining to said input states of said first subset of said plurality of input devices,

(2) storing said input status information pertaining to said input states of said first subset of said plurality of input devices in said I/O status table,

(3) acquiring, from said plurality of additional interface modules by way of said communication network, said input status

information pertaining to said input states of said second subset of said plurality of input devices, and

(4) storing said input status information pertaining to said input states of said second subset of said plurality of input devices.

2. A method according to claim 1, wherein each of said plurality of additional interface modules broadcasts I/O status information, and wherein said acquiring step (3) comprises receiving said broadcasts.

3. A method according to claim 2, wherein said broadcasts occur asynchronously.

4. A method according to claim 2, wherein each of said plurality of additional interface modules maintains respective additional I/O status tables, and wherein each of said plurality of additional interface modules receives said broadcasts and stores I/O status information received in said broadcasts to maintain said respective additional I/O status tables.

5. A method according to claim 4, wherein said I/O status table and said respective additional I/O status tables store substantially the same I/O status information.

6. A military vehicle comprising:

a power distribution and control system, the power distribution and control system further including

(A) a power source;

(B) a power transmission link;

(C) a plurality of input devices;

(D) a plurality of output devices;

(E) a communication network;

(F) a plurality of microprocessor-based interface modules, said plurality of interface modules being coupled to said power source by way

of said power transmission link, said plurality of interface modules being interconnected to each other by way of said communication network, and said plurality of interface modules being coupled to said plurality of input devices and to said plurality of output devices by way of respective dedicated communication links, and said plurality of interface modules including

(1) a first microprocessor-based interface module, said first interface module being coupled to a first subset of said plurality of input devices and to a first subset of said plurality of output devices, said first interface module having a first data memory that stores input status information for substantially all of said plurality of input devices, and said first interface module including a first control program that is executable by said first interface module to control said first subset of said plurality of output devices based on input status information from said plurality of input devices stored in said first data memory,

(2) a second microprocessor-based interface module, said second interface module being coupled to a second subset of said plurality of input devices and to a second subset of said plurality of output devices, said second interface module having a second data memory that stores input status information for substantially all of said plurality of input devices, said second interface module including a second control program that is executable by said second interface module to control said second subset of said plurality of output devices based on input status information from said plurality of input devices stored in said second data memory, and

(3) a plurality of additional microprocessor-based interface modules, said plurality of additional interface modules each being coupled to a respective additional subset of said plurality of input devices and to a respective additional subset of said plurality of

output devices, said plurality of additional interface modules each including an additional control program that is executable to control said respective additional subset of said plurality of output devices based on input status information from said plurality of input devices;

wherein said plurality of interface modules, said plurality of input devices, and said plurality of output devices are distributed throughout said military vehicle; and

wherein each respective interface module is locally disposed with respect to the respective input and output devices to which said respective interface module is coupled so as to permit distributed data collection from said plurality of input devices and distributed power distribution to said plurality of output devices.

7. A military vehicle according to claim 6, wherein each of said plurality of interface modules is physically and functionally interchangeable with each remaining one of said plurality of interface modules.

8. A military vehicle according to claim 6, wherein said military vehicle is a multipurpose modular vehicle and comprises a chassis and a variant module, said variant module being mounted on said chassis, said chassis and said variant module cooperating to provide said military vehicle with a first type of functionality, and said variant module being removable and replaceable with other variant modules to form other military vehicles with other different types of functionality.

9. A military vehicle according to claim 8, wherein said plurality of interface modules are physically and functionally interchangeable with interface modules utilized by the other variant modules.

10. A military vehicle according to claim 6, wherein said first control program, said second control program and said additional control programs are substantially identical.

11. A military vehicle according to claim 6,

wherein said plurality of output devices include first and second output devices, and

wherein, for said first and second output devices, said control program includes control logic to control said first and second output devices when at least some of said plurality of input devices have an input state that is undetermined.

12. A military vehicle according to claim 11, wherein for at least one I/O state of said vehicle in which an input state of one of said plurality of input devices is undetermined, said input state of said one input device is assumed by said control system to be a first state for purposes of said first output device and is assumed by said control system to be a second different state for purposes of said second output device.

13. A control method for a military vehicle comprising:

(A) providing a vehicle power distribution and control system,

(1) wherein said vehicle power distribution and control system comprises (a) a first plurality of input devices, a second plurality of input devices, and a plurality of additional input devices, (b) a first plurality of output devices, a second plurality of output devices, and a plurality of additional output devices, and (c) a first interface module, a second interface module, and a plurality of additional interface modules,

(2) wherein said first interface module, said second interface module, and said plurality of additional interface modules are connected by way of a communication network,

(3) wherein said first interface module, said second interface module, and said plurality of additional interface modules are distributed throughout said vehicle and are locally placed with respect to respective ones of said plurality of input and output devices,

(4) wherein said first interface module collects data from said first plurality of input devices and distributes power to said first plurality of output devices,

(5) wherein said second interface module collects data from said second plurality of input devices and distributes power to said second plurality of output devices, and

(6) wherein said first I/O interface module comprises a first I/O status table and said second I/O interface module comprises a second I/O status table;

(B) repetitively performing the following steps at said first interface module during operation of said first interface module, including

(1) acquiring input status information from said first plurality of input devices, said input status information pertaining to input states of said first plurality of input devices,

(2) storing said input status information from said first plurality of input devices in said first I/O status table,

(3) determining desired output states for said first plurality of output devices,

(4) storing output status information pertaining to said desired output states for said first plurality of output devices in said first I/O status table,

(5) controlling said first plurality of output devices in accordance with said desired respective output states,

(6) broadcasting, over said communication network, said input status information pertaining to said input states of said first

plurality of input devices to said second interface module and said plurality of additional interface modules,

(7) broadcasting, over said communication network, said output status information pertaining to said desired output states of said first plurality of output devices to said second interface module and said plurality of additional interface modules,

(8) acquiring, by way of said communication network, input status information pertaining to input states of said second plurality of input devices and output status information pertaining to output states of said second plurality of output devices,

(9) storing, in said first I/O status table, said input status information pertaining to said input states of said second plurality of input devices and said output status information pertaining to said output states of said second plurality of output devices,

(10) acquiring, by way of said communication network, input status information pertaining to input states of said additional plurality of input devices and output status information pertaining to output states of said additional plurality of output devices, and

(11) storing, in said first I/O status table, said input status information pertaining to said input states of said additional plurality of input devices and said output status information pertaining to said output states of said additional plurality of output devices; and

(C) repetitively performing the following steps at said second interface module during operation of said second interface module, including

(1) acquiring said input status information from said second plurality of input devices, said input status information pertaining to input states of said second plurality of input devices,

(2) storing said input status information from said second plurality of input devices in said second I/O status table,

(3) determining desired output states for said second plurality of output devices,

(4) storing said output status information in said second I/O status table, said output status information pertaining to said desired output states for said second plurality of output devices,

(5) controlling said second plurality of output devices in accordance with said desired respective output states,

(6) broadcasting, over said communication network, said input status information pertaining to said input states of said second plurality of input devices to said second interface module and said plurality of additional interface modules,

(7) broadcasting, over said communication network, said output status information pertaining to said desired output states of said second plurality of output devices to said second interface module and said plurality of additional interface modules,

(8) acquiring, by way of said communication network, said input status information pertaining to said input states of said first plurality of input devices and output status information pertaining to output states of said first plurality of output devices,

(9) storing, in said second I/O status table, said input status information pertaining to said input states of said first plurality of input devices and said output status information pertaining to said output states of said first plurality of output devices,

(10) acquiring, by way of said communication network, input status information pertaining to input states of said additional plurality of input devices and output status information pertaining to output states of said additional plurality of output devices, and

(11) storing, in said second I/O status table, said input status information pertaining to said input states of said additional plurality of input devices and said output status information

pertaining to said output states of said additional plurality of output devices.

14. A method according to claim 13, further comprising:

(1) acquiring, at a data logger and by way of said communication network, said input status information pertaining to said input states of said first plurality of input devices,

(2) storing, at said data logger, said input status information pertaining to said input states of said first plurality of input devices,

(3) acquiring, at said data logger and by way of said communication network, said input status information pertaining to input states of said additional plurality of input devices, and

(4) storing, at said data logger, said input status information pertaining to said input states of said additional plurality of input devices.

15. A method according to claim 13, wherein said plurality of additional interface modules each acquiring, by way of said communication network and in response to said broadcasting step (B) and said broadcasting step (C)(6), said input status information pertaining to said input states of said first plurality of input devices and said input status information pertaining to said input states of said second plurality of input devices.

16. A method according to claim 13, further comprising storing intermediate I/O status information in said I/O status table, said intermediate I/O status information being generated as a function of said I/O status information contained in said I/O status table.

17. A method according to claim 13, further comprising determining that said first interface module has been rendered inoperative based on a failure of said first interface module to perform at least one of

said broadcasting step (B)(6) and said broadcasting step (B)(7) within a predetermined amount of time.

18. A method according to claim 17, wherein said power distribution and control system is reconfigurable, and further comprising reconfiguring said power distribution and control system in response to said failure of said first interface module to perform at least one of said broadcasting step (B)(6) and said broadcasting step (B)(7) within a predetermined amount of time.

19. A method according to claim 13, wherein said broadcasting step (B)(6) and said broadcasting step (C)(6) occur asynchronously.

20. A method according to claim 19, wherein said broadcasting step (B)(7) and said broadcasting step (C)(7) occur asynchronously.

21. A method according to claim 13,

wherein said vehicle is a multipurpose modular vehicle comprising a chassis and a variant module, said variant module being mounted on said chassis, said chassis and said variant module cooperating to provide said vehicle with a first type of functionality, and said variant module being removable and replaceable with other variant modules to form other vehicles with other different types of functionality,

wherein said first plurality of input devices, said second plurality of input devices, and said plurality of additional input devices include input devices that are located on said chassis and input devices that are located on said variant module,

wherein said first plurality of output devices, said second plurality of output devices, and said plurality of additional output devices include output devices that are located on said chassis and output devices that are located on said variant module, and

wherein said first interface module, said second interface module, and said plurality of additional interface modules include interface modules

that are located on said chassis and interface modules that are located on said variant module.

22. A method according to claim 13,

wherein said controlling step (B)(5) comprises transmitting power control signals from said first interface module to respective ones of said first plurality of output devices, said power control signals being binary signals and each having an on state and an off state, and

wherein, for each respective one of said power control signals, power is supplied to said respective one of said first plurality of output devices when said respective control signal is in said on state and is not supplied to said respective one of said plurality of output devices when said respective control signal is in said off state.

23. A multipurpose modular vehicle comprising:

a chassis and a variant module, said variant module being mounted on said chassis, said chassis and said variant module cooperating to provide said vehicle with a first type of functionality, and said variant module being removable and replaceable with other variant modules to form other vehicles with other different types of functionality, and wherein said chassis and said variant module in combination include a power distribution and control system, said power distribution and control system further including

(A) a power source;

(B) a power transmission link;

(C) a plurality of input devices;

(D) a plurality of output devices;

(E) a communication network;

(F) a plurality of microprocessor-based interface modules, said plurality of interface modules being coupled to said power source by way of said power transmission link, said plurality of interface modules being interconnected to each other by way of said communication network, and

said plurality of interface modules being coupled to said plurality of input devices and to said plurality of output devices by way of respective dedicated communication links, and said plurality of interface modules including

(1) a first microprocessor-based interface module, said first interface module being coupled to a first subset of said plurality of input devices and to a first subset of said plurality of output devices, said first interface module having a first data memory that stores input status information for substantially all of said plurality of input devices, and said first interface module including a first control program that is executable by said first interface module to control said first subset of said plurality of output devices based on input status information from said plurality of input devices stored in said first data memory,

(2) a second microprocessor-based interface module, said second interface module being coupled to a second subset of said plurality of input devices and to a second subset of said plurality of output devices, said second interface module having a second data memory that stores input status information for substantially all of said plurality of input devices, said second interface module including a second control program that is executable by said second interface module to control said second subset of said plurality of output devices based on input status information from said plurality of input devices stored in said second data memory, and

(3) a plurality of additional microprocessor-based interface modules, said plurality of additional interface modules each being coupled to a respective additional subset of said plurality of input devices and to a respective additional subset of said plurality of output devices, said plurality of additional interface modules each including an additional program that is executable to control said

respective additional subset of said plurality of output devices based on input status information from said plurality of input devices;

wherein said plurality of interface modules, said plurality of input devices, and said plurality of output devices are distributed throughout said military vehicle; and

wherein each respective interface module is locally disposed with respect to the respective input and output devices to which said respective interface module is coupled so as to permit distributed data collection from said plurality of input devices and distributed power distribution to said plurality of output devices.

24. A vehicle system according to claim 23, wherein said chassis and said variant module respectively include first and second mating connectors, and wherein said first connector is also functionally and physically mateable with connectors used by the other variant modules.

25. A vehicle system according to claim 23, wherein said interface modules are interchangeable with interface modules used by the other variant modules.

26. A vehicle system according to claim 23, wherein said control system includes a plurality of switches that are located in a driver area of said vehicle, and wherein said plurality of switches has variable functionality depending on which variant module is mounted on said chassis.

27. A military vehicle comprising:

a power distribution and control system, the power distribution and control system further including

(A) a power source;

(B) a power transmission link;

(C) a plurality of input devices;

(D) a plurality of output devices;

(E) a communication network;

(F) a plurality of microprocessor-based interface modules, said plurality of interface modules being coupled to said power source by way of said power transmission link, said plurality of interface modules being interconnected to each other by way of said communication network, and said plurality of interface modules being coupled to said plurality of input devices and to said plurality of output devices by way of respective dedicated communication links, and said plurality of interface modules including

(1) a first microprocessor-based interface module,

(2) a second microprocessor-based interface module, and

(3) a plurality of additional microprocessor-based interface modules; and

wherein said plurality of interface modules, said plurality of input devices, and said plurality of output devices are distributed throughout said military vehicle;

wherein each of said plurality of interface modules are coupled to a respective local subset of said plurality of input devices and to a respective local subset of said plurality of output devices so as to permit distributed data collection from said plurality of input devices and distributed power distribution to said plurality of output devices; and

wherein each of said plurality of interface modules collects input status information from said respective local subset of said plurality of input devices and broadcasts said input status information over said communication network to each of the remaining ones of said plurality of interface modules, each of said remaining ones of said plurality of interface modules receiving said input status information and locally storing said input status information.

28. A military vehicle according to claim 1, wherein said broadcasts of said input status information occur asynchronously.